

Abstract of the Disclosure

[0061] An internal combustion engine of the present invention features
5 separate compression and expansion cycles. The engine includes a separate
compressor device which pressurizes air by a ratio greater than 15 to 1, at least one
two stroke combustion cylinder and a compressed air conduit for transferring
compressed air from the compressor to the at least one combustion cylinder. An air
injection valve injects the compressed air into the combustion cylinder during the
10 second half portion of the return stroke of the combustion cylinder. The
compressed air is mixed with fuel and combusted for expansion during a power
stroke. In this engine compression occurs only to a minor degree in the combustion
cylinder. Accordingly, the compression ratio of the present engine may be
significantly higher or lower than the volumetric expansion ratio of the combustion
15 cylinder thus resulting in corresponding increases in either power density or
thermodynamic efficiency respectively.